

PALS –

Peer-Assisted Learning Strategies (PALS) has been empirically validated for use with elementary school students as a supplemental technique to improve computation and math application skills. PALS pairs students based on ability level, and the students take turns being the tutor and the tutee. The students assist one another in practicing deficient math skills. Calhoon and Fuchs (2003) investigated the program when coupled with curriculum-based measurement (CBM) on 9th- 12th graders. Ninety-two students were randomly assigned to the PALS/CBM group or a comparison group. Over a 3 week period, the students participated in the PALS program 2 times a week for 15 weeks. CBM was used on the treatment group to monitor progress and provide diagnostic information of the students. The PALS/CBM group reported a moderate effect for computational skills. No difference was found between the two groups in the area of math application skills. [PALS WEBSITE](#)

CCC-

The Copy/Cover/Compare (CCC) intervention attempts to increase a student's mastery when completing multiplication facts. The intervention consists of instruction on the CCC's five steps: 1. looks at the first completed math fact, 2. read the problem aloud and copy the answer, 3. cover the problem, 4. read the problem aloud and write it from memory, and 5. compare the answer to the original problem. In a study with a treatment group of sixth grade LD students using a multiple baseline research design, the researchers reported an increase in the percent of multiplication facts correct between baseline (31.6 percent) and the treatment condition (98 percent) (Ozaki et al., 1996).

Applied Problems: Improving Performance Through a 4-Step Problem-Solving Approach *(Pólya, 1957; Williams, 2003)*

Students can consistently perform better on applied math problems if they follow an efficient 4-step plan of understanding the problem, devising a plan, carrying out the plan, and looking back.

(1) UNDERSTAND THE PROBLEM. To fully grasp the problem, the student may restate the problem in his or her own words, note key information, and identify missing information.

(2) DEVISE A PLAN. In mapping out a strategy to solve the problem, the student may make a table, draw a diagram, or translate the verbal problem into an equation.

(3) CARRY OUT THE PLAN. The student implements the steps in the plan, showing work and checking work for each step.

(4) LOOK BACK. The student checks the results. If the answer is written as an equation, the student puts the results in words and checks whether the answer addresses the question posed in the original word problem.

References

Pólya, G. (1957). *How to solve it* (2nd ed.). Princeton University Press: Princeton, N.J.

Williams, K. M. (2003). Writing about the problem solving process to improve problem-solving performance. *Mathematics Teacher*, 96(3), 185-187.

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Math Interventions

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